

430 REC'D/FILED 20 JAN 2000

FORM PTO-1390
(REV. 1-98)

U S DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

ASCOP058USNP

U S APPLICATION NO (If known, see 37 CFR 1.5)

09/463225

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371**

INTERNATIONAL APPLICATION NO. PCT/US99/01781	INTERNATIONAL FILING DATE 28 JANUARY 1999	PRIORITY DATE CLAIMED 30 JANUARY 1998
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TITLE OF INVENTION
METHOD AND APPARATUS FOR WEB TELEVISION FRANKING

APPLICANT(S) FOR DO/EO/US

Ascom Hasler Mailing Systems Inc.

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.
2. This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.
3. This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).
4. A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.
5. A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. is transmitted herewith (required only if not transmitted by the International Bureau).
 - b. has been transmitted by the International Bureau.
 - c. is not required, as the application was filed in the United States Receiving Office (RO/US).
6. A translation of the International Application into English (35 U.S.C. 371(c)(2)).
7. Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. have been transmitted by the International Bureau.
 - c. have not been made; however, the time limit for making such amendments has NOT expired.
 - d. have not been made and will not be made.
8. A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. A translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5))

Items 11. to 16. below concern document(s) or information included:

11. An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. A FIRST preliminary amendment.
 - A SECOND or SUBSEQUENT preliminary amendment.
14. A substitute specification.
15. A change of power of attorney and/or address letter.
16. Other items or information:

U.S. APPLICATION NO. (if known, see 37 CFR 1.5)

INTERNATIONAL APPLICATION NO
PCT/US99/01781ATTORNEY'S DOCKET NUMBER
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09/463225

 The following fees are submitted:

BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)):

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1070.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$930.00

International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$790.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$720.00

International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) \$98.00

ENTER APPROPRIATE BASIC FEE AMOUNT =

\$ 96.00

Surcharge of \$130.00 for furnishing the oath or declaration later than 20 30 months from the earliest claimed priority date (37 CFR 1.492(e))

\$

CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	\$
Total claims	4 - 20 =	0	x \$22.00	\$ 0
Independent claims	4 - 3 =	1	x \$82.00	\$ 78.00
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$270.00	\$
TOTAL OF ABOVE CALCULATIONS				\$ 174.00
Reduction of 1/2 for filing by small entity, if applicable. A Small Entity Statement must also be filed (Note 37 CFR 1.9, 1.27, 1.28).			+ \$	
SUBTOTAL				\$ 174.00
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).			\$	
TOTAL NATIONAL FEE				\$ 174.00
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +			\$	
TOTAL FEES ENCLOSED				\$ 174.00
			Amount to be refunded:	\$
			charged:	\$

- a. A check in the amount of \$ 174.00 to cover the above fees is enclosed
- b. Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees.
A duplicate copy of this sheet is enclosed.
- c. The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No 15-0610 A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:



021121

PATENT TRADEMARK OFFICE

SIGNATURE

 Carl Oppedahl
 NAME

32,746

Registration no.

09/463225

430 Rec'd PCT/PTO 20 JAN 2000

January 3, 2000
ASCOP058USNP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Application No. : to be assigned
Application of : Ascom Hasler Mailing Systems Inc.
Filing Date : herewith
For : Method and Device for Web Television Franking
Attorney Docket No. : ASCOP0058USNP

PRELIMINARY AMENDMENT

Preliminary to the examination of the application filed herewith, please make the following amendment:

In the specification:

At the first line, insert "This application claims priority from US Provisional Application Serial No. 60/073,144, filed January 30, 1998, which is hereby incorporated herein by reference."

Respectfully submitted,



Carl Oppedahl
Attorney for Applicant
PTO Reg. No. 32,746
(970)668-2050

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.10

Applicants : Ascom Hasler Mailing Systems Inc.
Serial No. : unknown
Filing Date : Herewith
Title of Invention : Method and Apparatus for Web Television Franking
Title of Papers : -Certificate of Express Mail
-Transmittal letter to the United States Designated/Elected Office
Concerning a Filing Under 35 U.S.C. 371
-Check No. 005769 for \$174.00

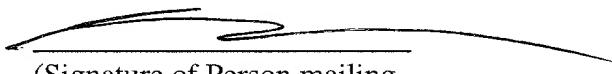
"Express Mail" Mailing Label

Number **EL362858110US**

Date of Deposit January 20, 2000

I hereby certify that these papers and fee are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, BOX PCT , Washington, D.C. 20231.

Stephanie G. Redenz
(Typed or Printed Name of Person
mailing paper or fee)


(Signature of Person mailing
paper or fee)

Method and apparatus for web television franking

09/463225

The invention relates generally to the task of printing postage indicia, typically a replica of a franked meter impression, in a home or small office. It relates more particularly to such printing with the use of a television set-top box or web television interface.

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Background of the invention

For many decades, postage has been applied to mail pieces in several ways, most commonly postage stamps, and imprints by postage meters (franking machines). Both technologies are very well developed and accepted. A postage meter, for example, uses a secure printer with a printing plate that is not accessible to the customer and that is not easily counterfeited. The postage meter also uses fluorescent ink, thus differing from other inks. One of the defining characteristics of a typical traditional postage meter is a secure housing, within which are located an accounting means and the printing means including the aforementioned printing plate. The accounting means registers the amount of postage printed and/or the amount of postage paid for that may be printed, these registered amounts respectively termed the “ascending register” and “descending register.” The accounting means is set directly by a postal authority or is remotely reset through a mechanism approved by the postal authority.

In recent years it has been suggested by some postal authorities that postage be indicated by means of printed indicia which are printed by conventional (non-secure) printers such as laser printers, ink-jet printers, and thermal transfer printers. Such a proposal immediately raises the question of counterfeiting. It is to be anticipated that some persons would be motivated to attempt to use just such conventional printers to generate printing which would permit a mail piece to be delivered without paying any postage amount. To attempt to counter such fraudulent activity, postal authorities have proposed to provide information in the postal indicia which would permit detection of fraud. This information would be generated by cryptographic means and would be authenticated by cryptographic means. Postal authorities have suggested that such information would be printed by means of a two-dimensional bar code, and that the bar code would have some redundancy to attempt to permit reading of the

bar code even after smudging or obliteration of portions of the bar code.

A typical arrangement as envisioned by some postal authorities calls for a PSD (postal security device) which has a secure housing and which contains counterparts to the aforementioned ascending and descending registers. The PSD's connections to the rest of the system are purely electrical. In this way the secure housing of the PSD differs greatly from the secure housing of the traditional postage meter, because the secure housing of the traditional postage meter has an opening, or more than one opening, through which is passed the mail piece or package label that is to receive the printed indicium.

The PSD contains processing capability for establishing cryptographically secure communication with a postal authority, which permits setting and reading the ascending and descending registers and related information. It contains nonvolatile memories for the registers and for cryptographic keys. It contains firmware to permit generation of data to be used for printing of postal indicia. One arrangement for a PSD is that set forth in PCT publication 98-20461 entitled "System for protecting cryptographic processing and memory resources for postal franking machines."

The PSD may contain a secure and reliable real-time clock and calendar, or alternatively it may employ a cryptographically secure substitute for such a real-time clock and calendar as described in PCT publication 98-08325 entitled "Printing postage with cryptographic clocking security."

In the typical arrangement as envisioned by some postal authorities and by some companies seeking to offer such services, the PSD is located physically nearby to the printer. For example it may be a "button" integrated circuit plugged into a socket that is connected to a personal computer with a printer.

Alternative topologies are described for example in PCT publication 98-13790 entitled "Proof of postage digital franking." In that publication it is proposed to link a PSD to one or more printers for printing of postal indicia, for example through a local area network. Such an

arrangement could be useful in a business or office setting.

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Despite the development of these and other proposed ways of arranging a system including a PSD and one or more printers, there is a need for a system suitable for homes and small businesses. There is a need for such a system composed largely of existing and off-the-shelf equipment, that requires little or no additional expenditure of money or installation of new equipment. There is a need for such a system that does not require a personal computer and the attendant expense and potential for malfunction.

Summary of the invention

The invention solves the problem of printing postage indicia, typically a replica of a franked meter impression, in a home or small office, with the use of a television set-top box or web television interface. The system brings the ability of printing postage stamps on label stock.

Description of the drawing

Fig. 1 is a functional block diagram of the system according to the invention.

Detailed description

15 In the system disclosed herein, a postage indicium is printed onto a self-adhesive or water-activated label. The indicium is printed using a printer 81, which may be a printer supplied with a set-top box 70 for web television viewing. For example, in some web television viewing systems, a printer is provided for printing information for the user or for printing store coupons or other incentives. It has been suggested, for example, to have an incentive associated with a pay-per-view movie, such as a coupon which may be redeemed for some product or activity connected with the movie. The printer 81 used for such coupons could be employed to print postage indicia on label stock. The set-top box 70, printer 81, television 83, and remote control 88 are collectively termed the customer station.

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The sequence of events may be as will now be described. The customer identifies himself or herself to the Host Data Center 65 (sometimes simply called a "host"), via a communications link 60 which is preferably the Internet but which could optionally be a private network operated by the service provider. The user employs a television remote control device 88 to send signals to the set-top box 70, and calls up a submenu relating to postage. The submenu is displayed on the screen of the television 83. The menu requires the customer to enter an identification, and this together with a unique identifier associated with the set-top box 70 is transmitted to the Host Data Center 65. The Host Data Center 65 confirms that the identification and identifier are valid. The user inputs may be by means solely of inputs by the remote control device 88 or may be accomplished in part by means of an external keyboard, omitted for clarity in Fig. 1.

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Optionally the user may enter information about the mail piece, such as the destination address or the Zip code of the destination address. The postal indicium generated may thus carry the Zip code or the entirety of the destination address in a cryptographically signed form, which permits postal authorities to confirm that the indicium does in fact correspond to the mail piece. (This permits detection of fraudulent use of an indicium for a second or third time on a mail piece with a different Zip code or destination address.) In addition, the information printed on the label printer 81 (on label stock 82) may include not only the postal indicium but also the mailing address and a sorting bar code containing the Zip code. The label is affixed by the customer to the mail piece (omitted for clarity in Fig. 1) and is entered into the mail stream. The postal authority may then scan the indicium and perform a cryptographic authentication to confirm the validity of the indicium.

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If the customer has printed more than one label, then there is the danger that the customer would inadvertently place a label on the wrong mail piece, that is, a mail piece that does not correspond with the label. To minimize this risk, it is desirable to print on the label not only the bar code, which is not human-readable, but also some human-readable information to guide the customer in identifying the corresponding envelope. This information could include the aforementioned Zip code and other information to resolve any question in the case of two mail pieces going to the same Zip code.

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Optionally a scale 80 is provided which is communicatively coupled to the set-top box. In this arrangement, the data sent to the Host Data Center 65 includes the mass of the mail piece (placed upon the scale) and the appropriate postage value is calculated and used in generating the postal indicium. The postage value is thus contained within the indicium and the customer is charged for the corresponding amount of postage.

Alternatively the customer may communicate the mass of the mail piece by means of key entries at the remote control 88 or at the aforementioned keyboard.

Those skilled in the art will appreciate that at present, speech recognition technologies are of limited utility. It is expected, however, that speech recognition may be used for customer identification as described above, for communicating the mail piece destination address, and for communicating the mass of the mail piece, as well as other functions such as indicating the class of service (mail type) such as first class, air mail, etc.

The Host Data Center 65 contains one or more PSDs 10A, 10B, 10C. Each PSD contains security-critical functions for the postal indicia customer. In one arrangement, there are as many PSDs as there are customers and they correspond to each other. In another, preferred, arrangement, there are fewer PSDs than there are customers, and the operator of the Host Data Center 65 maintains its own set of accounts with respect to the various customers. The PSD contains a random number generator, various storage registers, an optional date/time clock, and other circuitry. The PSD supports device authorization, finance record-keeping, creation of indicia, and audit functions. In sum, the PSD ensures that only authorized persons are able to apply indicia to mailpieces, and ensures that the indicia are accounted for.

Although the PSD may be located in or nearby to the set-top box 70, it is considered preferable for it to be located distant from the customer location, namely within the Host Data Center 65.

It is expected that the set-top box has identification functions which are usable for authenticating users when they order pay-per-view movies and the like, and these functions rely upon a tamper-proof identifier within the set-top box 70 as well as upon cryptographic

functions of modest security. The built-in capability of the set-top box may include a fingerprint reader in which case the fingerprint authentication may be used as well. These functions may be combined with the above-mentioned user authentication steps to improve the level of confidence regarding the authentication of the customer.

5 It should be appreciated that nothing about the system described herein need be limited to a single provider of delivery services. For example, the Host Data Center 65 may offer the ability to print indicia for the US Postal Service, for Federal Express, and for UPS. It may be able to give the customer information such as price comparisons. In such a system, there is provided a PSD or its functional equivalent corresponding to each of the delivery service providers. The host 20 has communications links to the various carriers 30A, 30B, and 30C.

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15 It should also be appreciated that many services are capable of being tracked based on a package tracking number. The shipping label 82 may contain a tracking number generated by the delivery service provider, provided in bar code form for tracking purposes. In such an arrangement, the Host Data Center 65 or the set-top box 70 may retain a list of such tracking numbers, which makes it easy for the customer to track mail pieces. Typically the customer would use the remote control 88 or the optional keyboard to enter a tracking menu, and would select one or more packages to be tracked. The tracking results would be displayed on the screen of the television 83.

20 Those skilled in the art will appreciate that the term "set-top box" does not literally require location on the top of the television set, and rather that the box permits connection between a conventional broadcast television and enhanced services such as pay-per-view television. Indeed it is expected that the set-top box may come to be contained in the same housing as the television, at such time as the set-top box becomes standardized within a particular country or market area, all without departing in any way with the invention.

25 The Host 20 includes such functions as providing network access to the carriers 30A, 30B, 30C; customer account control; identification access control; funds debit and credit control; cryptographic certificate control; and audit control. Processor 40 provides communications

protocol and message integrity control, which in a preferred embodiment uses TCP (transmission control protocol) as a way of assuring message integrity, and uses higher-level protocols to carry out customer sessions. Finally, functional block 50 provides communications interfacing, for example via frame relay to the Internet or via other 5 communications-layer protocols for satellite, dedicated data line, analog modem, or television cable communications.

The Host Data Center 65 is thus able to serve as a single point of contact for each of several delivery service providers.

In an alternative embodiment, the Host Data Center 65 communicates with the customer station at the customer's location by means of an enhanced fax machine 90 which is connected to the Internet 60 or other communications channel by an appropriate means. The fax machine is, of course, connected with the public switched telephone network and responsive to incoming fax telephone calls for receiving and printing fax messages. The fax machine interfaces with a printer 91 printing on label stock 92, much like the printer 81 and label stock 82. An optional scale 93 is connected with the fax machine 90. Optionally a personal computer 94 may be connected with the fax machine 90 to permit easy user inputs and display of information from the Host Data Center 65.

Claims

1. A system for printing postal indicia at more than one location, said system comprising a host and more than one customer station, the host comprising at least one postal security device, said postal security device comprising a secure housing, cryptographic means, and nonvolatile memory, the nonvolatile memory comprising an accounting register indicative of postage value;

each said customer station comprising a television, a set-top box communicatively coupled with the television, a remote control communicatively coupled with the set-top box, and a printer communicatively coupled with the set-top box, said printer disposed to print labels;

said host and each customer station communicatively coupled;

said system further comprising means responsive to information provided by a customer at one of said customer locations via the remote control for ordering enhanced television services at the television;

said system further comprising means responsive to information provided by the customer at the remote control at one of said customer stations for sending to the host a first message requesting a postal indicium and identifying the customer station associated therewith, means responsive to the first message for presenting to the postal security device a request for the postal indicium; means responsive to the generation by the postal security device of a second message indicative of the postal indicium for transmitting information indicative of the postal indicium to the set-top box; and means responsive to said information indicative of the postal indicium for causing said printer to print said postal indicium on a label;

said system further comprising accounting means within said host storing information indicative of postage value printed at each of said customer stations; and means responsive to the message identifying the customer station for modifying the stored information associated with the customer station within said accounting means;

said postal security device disposed to make a record in its nonvolatile memory indicative of the postage value communicated in said postal indicium.

2. A method for printing postal indicia at more than one location, said method used with a system comprising a host and more than one customer station, the host comprising at least one postal security device, said postal security device comprising a secure housing, cryptographic means, and nonvolatile memory, the nonvolatile memory comprising an accounting register indicative of postage value; each said customer station comprising a television, a set-top box communicatively coupled with the television, a remote control communicatively coupled with the set-top box, and a printer communicatively coupled with the set-top box, said printer disposed to print labels; said host and each customer station communicatively coupled; said system further comprising accounting means within said host storing information indicative of postage value printed at each of said customer stations; said method comprising the steps of:

providing information at one of said customer locations via the remote control relating to a requested postal indicium;

sending to the host a first message requesting the postal indicium and identifying the customer station associated therewith;

presenting to the postal security device a request for the postal indicium;

generating by the postal security device a second message indicative of the postal indicium;

making a record in the nonvolatile memory of the postal security device indicative of the postage value communicated in said postal indicium;

transmitting information indicative of the postal indicium to the set-top box;

responding to said information indicative of the postal indicium by causing said printer to

print said postal indicium on a label; and

modifying the stored information in the accounting means associated with the customer station indicative of the postage value communicated in said postal indicium.

3. A system for printing postal indicia at more than one location, said system comprising a host and more than one customer station, the host comprising at least one postal security device, said postal security device comprising a secure housing, cryptographic means, and nonvolatile memory, the nonvolatile memory comprising an accounting register indicative of postage value;

each said customer station comprising a fax machine and a printer communicatively coupled with the fax machine, said printer disposed to print labels; said fax machine communicatively coupled with the public switched telephone network;

said host and each customer station communicatively coupled;

each said fax machine further comprising means responsive to incoming fax telephone calls for receiving and printing fax messages;

15 said system further comprising means responsive to information provided by the customer at one of said customer stations for sending to the host a first message requesting a postal indicium and identifying the customer station associated therewith, means responsive to the first message for presenting to the postal security device a request for the postal indicium; means responsive to the generation by the postal security device of a second message
20 indicative of the postal indicium for transmitting information indicative of the postal indicium to the fax machine; and means responsive to said information indicative of the postal indicium for causing said printer to print said postal indicium on a label;

said system further comprising accounting means within said host storing information indicative of postage value printed at each of said customer stations; and means responsive to

the message identifying the customer station for modifying the stored information associated with the customer station within said accounting means;

• said postal security device disposed to make a record in its nonvolatile memory indicative of the postage value communicated in said postal indicium.

5 4. A method for printing postal indicia at more than one location, said method used with a system comprising a host and more than one customer station, the host comprising at least one postal security device, said postal security device comprising a secure housing, cryptographic means, and nonvolatile memory, the nonvolatile memory comprising an accounting register indicative of postage value; each said customer station comprising a fax machine communicatively coupled with the public switched telephone network; a printer communicatively coupled with the fax machine, said printer disposed to print labels; said host and each customer station communicatively coupled; said system further comprising accounting means within said host storing information indicative of postage value printed at each of said customer stations; said method comprising the steps of:

10 providing information at one of said customer locations via the fax machine relating to a requested postal indicium;

15 sending to the host a first message requesting the postal indicium and identifying the customer station associated therewith;

presenting to the postal security device a request for the postal indicium;

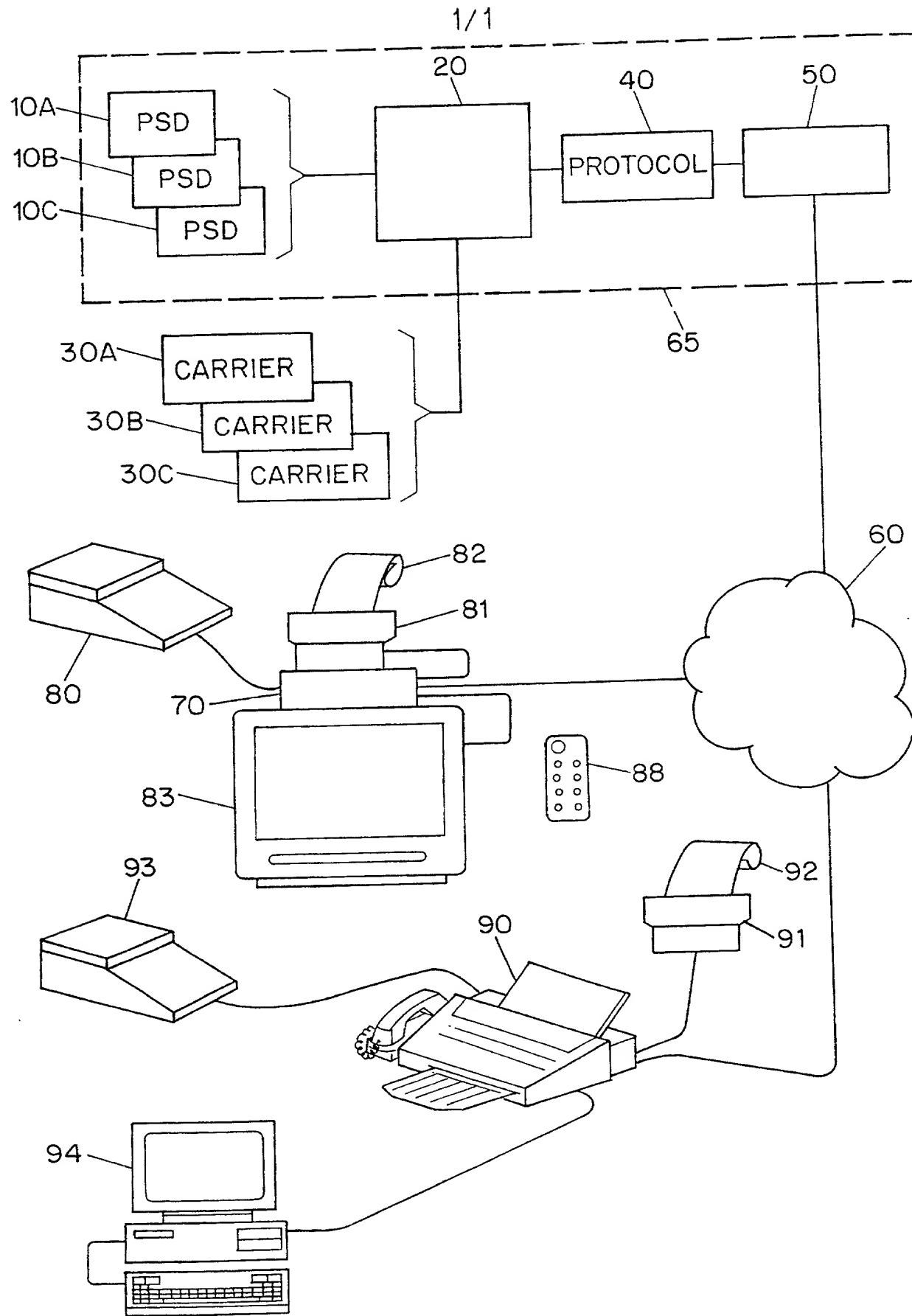
20 generating by the postal security device a second message indicative of the postal indicium;

making a record in the nonvolatile memory of the postal security device indicative of the postage value communicated in said postal indicium;

transmitting information indicative of the postal indicium to the fax machine;

responding to said information indicative of the postal indicium by causing said printer to print said postal indicium on a label; and

modifying the stored information in the accounting means associated with the customer station indicative of the postage value communicated in said postal indicium.



TO REC'D BY 10:00 AM
J.8 FEB 2000
OPPEDAHL & LARSON
857465225
FILE NO.: ASCOP058USNP
INVENTOR: Schwartz, et al.

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My citizenship, residence and post office address are as listed below next to my name.

I believe I am the original, first and [] sole/[x] joint inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled: Method and Apparatus for Web Television Franking the specification of which

- (a) [] is attached hereto.
- (b) [] was filed on _____ as Application Serial No. _____ and was amended on _____.
- (c) [X] was described and claimed in International Application No. PCT/US99/01781 filed on January 28, 1999 and amended on _____.

Acknowledgment of Duty of Disclosure

I hereby state that I have reviewed and understood the content of the above identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to the patentability of the subject matter claimed in this application in accordance with Title 37, Code of Federal Regulations § 1.56(a).

35 U.S.C. § 120

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) or 365(c) of any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose material information as defined in 37 CFR § 1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status)(patented,pending,abandoned)	(Patent No. if applicable)
<u>PCT/US99/01781</u>	<u>01/28/99</u>		
(Application Serial No.)	(Filing Date)	(Status)(patented,pending,abandoned)	(Patent No. if applicable)

Power of Attorney

I hereby appoint Carl Oppedahl, PTO Reg. No. 32,746, Marina T. Larson, PTO Reg. No. 32,038, and Nancy J. Parsons, PTO Reg. No. 40,364 of the firm of OPPEDAHLL & LARSON LLP, having office at P.O. Box 5270, 611 Main Street, Frisco, CO 80443 as attorneys to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

SEND CORRESPONDENCE TO:
OPPEDAHL & LARSON LLP
P.O. Box 5270
Frisco, CO 80443-5270

DIRECT TELEPHONE CALLS TO:
OPPEDAHL & LARSON LLP
(970) 668-2050

Claim for Priority

I hereby claim foreign priority benefits under 35 U.S.C. § 119 (a)-(d) or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign applications for patent or inventor's certificate, or of, any PCT international application having a filing date before that of the application on which priority is claimed.

EARLIEST FOREIGN APPLICATION(S), FILED WITHIN TWELVE MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION					
COUNTRY	APPLICATION NO.	DATE OF FILING (day/month/year)	DATE OF ISSUE (day/month/year)	PRIORITY CLAIMED	CERTIFIED COPY ATTACHED
				YES [] NO []	YES [] NO []
FOREIGN APPLICATION(S), IF ANY, FILED MORE THAN 12 MONTHS (6 MONTHS FOR DESIGN) PRIOR TO SAID APPLICATION					
COUNTRY	APPLICATION NO.	DATE OF FILING (day/month/year)	DATE OF ISSUE (day/month/year)		

Provisional Application

I hereby claim the benefit under 35 U.S.C § 119(e) of any United States provisional application(s) listed below.

60/073,144 01/30/98
(application number) (filing date)

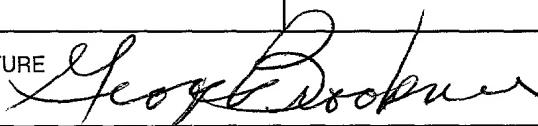
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR	LAST NAME <u>SCHWARTZ</u>	FIRST NAME <u>ROBERT</u>	MIDDLE NAME
RESIDENCE & CITIZENSHIP	CITY OF RESIDENCE <u>BRANFORD</u>	STATE OR COUNTRY OF RESIDENCE <u>CT</u>	COUNTRY OF CITIZENSHIP <u>US</u>
POST OFFICE ADDRESS 191 Linden Drive	CITY Branford	STATE/COUNTRY ZIP CODE <u>CT</u>	
DATE <u>2/8/2000</u>	SIGNATURE <u>Robert G. Schwartz</u>		

[X] Signature for additional joint inventor attached. Number of Pages 1.

[] Signature by Administrator(trix) or legal representative for deceased or incapacitated inventor. Number of Pages ____.

[] Signature for inventor who refuses to sign or cannot be reached by person authorized under 37 CFR § 1.47. Number of Pages ____.

NAME OF SECOND INVENTOR	LAST NAME <u>BROOKNER</u>	FIRST NAME <u>GEORGE</u>	MIDDLE NAME
RESIDENCE & CITIZENSHIP	CITY OF RESIDENCE <u>NORWALK</u>	STATE OR COUNTRY OF RESIDENCE <u>CT</u>	COUNTRY OF CITIZENSHIP <u>US</u>
POST OFFICE ADDRESS 11 Surrey Drive		CITY Norwalk	STATE/COUNTRY ZIP CODE CT
DATE <u>Feb. 3, 2000</u>	SIGNATURE 		
NAME OF THIRD INVENTOR	LAST NAME <u>ROSEN</u>	FIRST NAME <u>RICHARD</u>	MIDDLE NAME
RESIDENCE & CITIZENSHIP	CITY OF RESIDENCE <u>TRUMBULL</u>	STATE OR COUNTRY OF RESIDENCE <u>CT</u>	COUNTRY OF CITIZENSHIP <u>US</u>
POST OFFICE ADDRESS 180 Merrimac Drive		CITY Trumbull	STATE/COUNTRY ZIP CODE CT
DATE <u>Feb. 7, 2000</u>	SIGNATURE 